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8. Item	9. Page	10. Step	11. Proposed Modifications	
9	Sec.3	3.2.5	Replace page 18 to make 3.2.5 flow from 3.2.4 to 3.2.6.	
10	Sec.3	Pg.19	Replace Figure 3-4	
11	Sec.3	3.2.6	Replace entire section of 3.2.6	
12	Sec.3	Pg.20B	Add Figure 3-4a	
13	Sec.3	3.2.9	Replace first paragraph of section.	
14	Sec.3	3.2.11	Replace entire section of 3.2.11	
15	Sec.3	Pg.27A	Add Figure 3-6a	
16	Appen.A		Add pages A-5A, A-5B, replace pages A-6, A-7, add pages A-7A, A-7B, A-15A, A-15B, A-18 and A-19	
17	Sec.5		Replace Table 5-1	
18	Appen.D		Add page D-8, "Tank T-8"	
12. Justification (Reason for Modification)				

<u>SECTION</u>	<u>PAGE</u>
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TABLE 1-1  
TANK DESCRIPTIONS  
09 ORIGINAL PROCESS WASTE LINES

TANK NUMBER	HSS	BUILDING NO. (1)	NUMBER OF TANKS	CONSTRUCTION TYPE (2)	VOLUME (gal)	CONSTRUCTION MATERIAL (3)	TANK STATUS (4)	YEAR INSTALLED
T-1	NA	122	1	UG	800	SS	Removed (Jan 1984)	1955
T-2	122	441	1	UG	3,000	Conc	Abandoned (June 1982)	1952
T-3	122	441 (429)	2	1 - UG, 1 - AG1	UG-3,000, AG-3,200	UG-Conc, AG-Sil	Abandoned (June 1982)	1952
T-4	NA	447	3	FS	60 ea	Conc	Active (e)	1962
T-5	NA	444	2	AG1	4,000 ea	Sil	Active (e)	1952
T-6	NA	444	2	FS	500 & 300	Conc	Active (e)	1952
T-7	159	559 (528)	2	AG2	2,000 ea	Sil	Currently inactive (90-day)*	1969
T-8	126	771 (728)	2	UG	25,000 ea	Conc	Plenum deluge (d)	1952
T-9	132	776 (730)	2	UG	22,500 ea	Conc	Plenum deluge (e)	1955
T-10	132	776 (730)	2	UG	4,500 ea	Conc	Abandoned (Dec 1982)	1955
T-11	NA	707 (731)	2	UG	2,000 ea	Conc	Abandoned part removed 1975	1959
T-12	NA	N/A	N/A	N/A	N/A	N/A	Invalid tank location	N/A
T-13	215	774	1	SU	600	Conc	Abandoned (1972)	1952
T-14	124	774	1	UG	30,000	Conc	Abandoned (1989)	1952
T-15	146	774	2	UG	7,500 ea	Conc	Removed (1972)	1969
T-16	124,125	774	2	UG	14,000 ea	Conc	Abandoned (1989)	1952
T-17	146	774	4	UG	2-3,750; 2-7,500	Conc	Removed (1972)	1969
T-18	NA	778	1	SU	Unknown	Conc	Abandoned (1982?)	Unk.
T-19	NA	779	2	SU	1,000 ea	Conc	Plenum deluge (d)	1964
T-20	NA	779	2	SU	8,000 ea	Conc	Abandoned (Dec 1982)	1964
T-21	NA	886 (828)	1	FS	135	Conc	Abandoned (1978)	1963
T-22	NA	886 (828)	3	AG2	2-450, 1-100	SS	Abandoned (1978)	1963
T-23	NA	865	1	SU	6,000	Conc	Abandoned (May 1982)	1979
T-24	NA	881 (887)	7	AG2	2,700 ea	Sil	Active (e)	1952
T-25	NA	883	2	AG1	750 ea	Sil	Active (e)	1952
T-26	NA	883	3	AG1	750 ea	Sil	Active (e)	1965
T-27	NA	886	1	AG1	500	Sil	Removed (July 1989)	Unk.
T-28	NA	889	2	FS	1,000	Conc	Active (e)	1965
T-29	NA	774	1	OG	200,000	Sil	Abandoned (1985)	1952
T-30	NA	707 (731)	1	SU	23,111	Conc	Secondary containment for 90 day storage	1959

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TABLE 1-1  
TANK DESCRIPTIONS  
OU9 ORIGINAL PROCESS WASTE LINES

TANK NUMBER	IHSS	BUILDING NO.(1)	NUMBER OF TANKS	CONSTRUCTION TYPE(2)	VOLUME (gal)	CONSTRUCTION MATERIAL(3)	TANK STATUS(4)	YEAR INSTALLED
T-31	NA	N/A	N/A	N/A	N/A	N/A	Invalid tank location	N/A
T-32	NA	881 (887)	1	SU	131,160	Conc	Active(e)	1952
T-33	NA	N/A	N/A	N/A	N/A	N/A	Invalid tank location	N/A
T-34	NA	N/A	N/A	N/A	N/A	N/A	Invalid tank location	N/A
T-35	NA	N/A	N/A	N/A	N/A	N/A	Invalid tank location	N/A
T-36	NA	771C	1	SU	500	Stl	Abandoned (1984)	1965
T-37	NA	771C	1	SU	500	Conc	Abandoned (1984?)	Unk.
T-38	NA	779	1	AG2	1,000	Stl	Active(c)	Unk.
T-39	NA	881	4	AG1	250 ea	Stl	Removed (1975)	1952
T-40	NA	889	2	UG	400 ea	Conc	Abandoned (1981/1982)	mid 1950s

**Notes:**

(1) Building numbers in parentheses are process waste pits adjacent to production buildings.

(2) Tank Types:

FS	Floor Sump (used for spill control)
SU	Sump (open-top or covered)
UG	Underground (sealed, permanently closed top)
AG1	Above-Grade
AG2	Above-Grade in sump
OG	On-Grade

(3) Tank Materials:

SS	Stainless Steel
Stl	Steel
Conc	Concrete

(4) Active Tank Categories (as marked):

a	Incidental spill control; not RCRA-permitted
b	RCRA-interim status process waste tank
c	90-day transuranic waste tank
d	Converted to the RFP plenum fire deluge system as a firewater catch tank
e	Secondary containment for RCRA-permitted waste tank

N/A = Not Applicable

NO = Number

RCRA = Resource Conservation and Recovery Act

RFP = Rocky Flats Plant

\*Currently inactive and undergoing decontamination for subsequent reuse. Investigation of actively used tanks is postponed until the use of tank is discontinued.

EG&G ROCKY FLATS PLANT  
Operable Unit 9  
Technical Memorandum No.1  
Volume I, Part A

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Section: 1.0 REV. 0  
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Organization: Environmental Management

Memorandum is Volume I, Part A - Outside Tanks. Part B (Inside Tanks) and Volume II (Pipelines) are planned to be submitted at a later date.

At this time, a document/drawing search of the OPWL pipelines is proceeding concurrent with the outside building tank investigations. This search includes acquiring engineering drawings and information to supplement knowledge of pipeline locations, structural features, and releases to better define initial sampling locations. Because the majority of valve vaults are associated with the pipelines and further information is being collected on the pipelines including structural features such as valve vaults, valve vaults associated with pipelines will be addressed in Volume II of this Technical Memorandum, which will be submitted a later date. However, any valve vault that is associated with an OPWL tank (e.g., Tank T-3) will be investigated under this volume of the Technical Memorandum for tanks outside buildings or under Volume I, Part B, for tanks inside buildings.

The outside tanks in the OPWL are generally tanks in open areas of the Industrial Area (IA) at RFP and are either outside or are within small buildings (vaults or waste pits) that only enclose the tank. There are 20 outside tank locations. The tank numbers and descriptions for outside tanks are listed in Table 1-2. Potential overlap of these tanks with other OUs or Individual Hazardous Substance Sites (IHSSs) is shown in Table 1-3.

The tank investigations comprise two stages. Stage 1 is designed to locate areas of contamination within the OU9 vadose zone soils and to assess the nature of contamination

TABLE 1-2  
OUTSIDE TANK/INDIVIDUAL HAZARDOUS SUBSTANCE SITE NUMBERS AND DESCRIPTIONS  
OU9 ORIGINAL PROCESS WASTE LINES

TANK NUMBER	OTHER BSS NOS.	EG&G TANK NUMBER	BUILDING NO.	NUMBER OF TANKS	CONSTRUCTION TYPE	VOLUME	CONSTRUCTION MATERIAL	WASTE STREAM	TANK STATUS	DATE	AIR EMISSION INVENTORY NO.	RCRA ID NUMBER
T-1	NA	UNKNOWN	122	1	UG	800	STAINLESS	BLDG 122 WASTE	REMOVED	JAN 1964	-	-
T-2	122	UNKNOWN	441	1	UG	3,000	CONCRETE	BLDG 122, 123, 441 WASTE	PART REMOVED	1966	-	-
T-3	122	T-123	441	1	AG	3,200	STEEL	BLDG 122, 123, 441 WASTE	ABANDONED	JUNE 1982	#00076	-
				1	UG	3,000	CONCRETE	BLDG 122, 123, 441 WASTE	ABANDONED	JUNE 1982	#00077	-
T-7	159	T1-522, T2-523	559(528)	2	AG in sump	2,000	STEEL	BLDG 559 WASTE	INACTIVE (90 DAY)*		-	?
T-8	126	T8 EAST, T8 WEST	771(728)	2	UG	25,000	CONCRETE	771 WASTE AND 771 PLENUM DELUGE	CONVERTED TO PLENUM DELUGE	MAY 1984	T1-#00282, T2-#00283	-
T-9	132	730 TANKS	776(730)	2	UG	22,500	CONCRETE	LAUNDRY WATER FROM BLDG 776	CONVERTED TO PLENUM DELUGE	OCT 1984	00300	-
T-10	132	730 TANKS	776(730)	2	UG	4,500	CONCRETE	LAUNDRY WATER FROM BLDG 776	ABANDONED	DEC 1982	00302	-
T-11	NA	EAST & WEST PROCESS WASTE TANKS	707(731)	2	UG	2,000	CONCRETE	BLDG 707	PART REMOVED	1975	-	-
T-30	NA	731 STRUCTURE	731	1	SUMP	23,111	CONCRETE	BLDG 707	ACTIVE SPILL CONTROL		-	CONTAMNANT REF #2011
T-14	124	T-68	774	1	UG	30,000	CONCRETE	BLDG 774 HIGH-NITRATE WASTE	ABANDONED	NOV 1989	#184, NDT-1167	#55.18
T-16	124, 125	T-68, T-67	774	2	UG	14,000	CONCRETE	BLDG 774 HIGH-NITRATE WASTE	ABANDONED	NOV 1989	00182 00183	T66-#55.14, T67-#55.15
T-15	146	T-34E, T34W	774	2	UG	7,500	CONCRETE	BLDG 774 TREATED AQUEOUS WASTE	REMOVED	1972	-	-
T-17	146	T-30, T-33	774	2	UG	3,750	CONCRETE	BLDG 774 TREATED AQUEOUS WASTE	REMOVED	1972	-	-
		T-31, T-32		2	UG	7,500	CONCRETE	BLDG 774 TREATED AQUEOUS WASTE	REMOVED	1972	-	-
T-21	NA	BLDG 881 FLOOR SUMP	886(828)	1	FS	250	CONCRETE	INCIDENTAL OVERFLOW FROM T-22	ABANDONED	1978	?	-
T-22	NA	TANKS 440, 449	886(828)	2	AG	450	STAINLESS	T-440 and T-449 - BUILDING 886 ROOMS 101 AND 103 WASTE AND FISSILE URANIUM	ABANDONED	1978	#00039, #000294	-
				1	AG	100	STAINLESS	PLUTONIUM	REMOVED		-	-
T-27	NA	PORTABLE LIQUID DUMPSTER	886	1	AG	500	STEEL	FROM T-22, BLDG 886	REMOVED	JULY 1989	-	-
T-24	NA	T-183, 184, 185, 802A, 802B, 802C, 802D	881(887)	7	AG	2,700	STEEL	BLDG 881 WASTE	ACTIVE/RCRA		-	#40 20-40 28
T-32	NA	BLDG 881 PROCESS WASTE PIT	881(887)	1	SUMP	131,160	CONCRETE	BLDG 881 WASTE	ACTIVE/INCIDENTAL SPILL CONTROL		-	SCR #2014
T-29	NA	T-207	SOUTH 774	1	ON-GRADE	200,000	STEEL	UNTREATED 774 WASTE	ABANDONED	1985	#00198, NDT-1184	#40
T-40	NA	UNKNOWN	NORTH 889	2	UG	400	CONCRETE	BLDG 889 WASTES	ABANDONED	1981/1982	-	-

**NOTES:**

AG = aboveground

Bldg. = Building

gal = gallons

ID = Identification

NOS = Numbers

RCRA = Resources Conservation and Recovery Act

UG = underground

FS = Floor Sump

\* = currently inactive and undergoing 90-day closure for subsequent reuse

Investigation of actively used tanks will be postponed until use of tanks is discontinued.

TABLE 1-3 (Continued)  
POTENTIAL OPWL INTERACTIONS WITH OTHER RFP OPERABLE UNITS

TANK	POTENTIAL INTERACTION WITH OTHER OUs
T-9, T-10. (cont.)	IHSS 118.1 (Multiple Solvent Spills West of Building 730), OU8, is located immediately west of the building which houses T-9 and T-10. 118.1 is the former location of an underground carbon tetrachloride storage tank which may have leaked during its operating history. The tank was removed in 1981. The IAG specifies a soil gas survey of 118.1, with soil borings where the survey detects contamination.
T-11, T-30	None
T-14, T-16	T-14 and T-16 consist of three inactive process waste tanks (designated T66, T67, and T68) located on the east side of Building 774. Two other IHSSs also address these tanks. IHSS 124 (Radioactive Liquid Waste Storage Tanks), is comprised of three subparts (124.1, 124.2, and 124.3) which target T66, T67, and T68, respectively. IHSS 125 (Holding Tank), also targets tank T66. IHSSs 124 and 125 have incorporated in to OU9 from OU8.
T-21, T-22	IHSS 164.2 (Building 886 Radioactive Spills) that has been incorporated from OU14, targets uranium contamination in soil around and beneath Building 886. 164.2 appears on location maps to focus on the eastern side of 886, whereas T-21 and T-22 are immediately west of 886. The IAG specifies a surface radiation survey and analysis of soil boring samples for HSL volatiles, HSL semi-volatiles and various radionuclides at 164.2.
T-24, T-32	T-24 and T-32 are possibly affected by IHSSs 106 (Outfall) and 107 (Hillside Oil Leak), OU1. Numerous monitoring wells and boreholes have been completed in the vicinity of T-24 and T-32 in conjunction with the 881 Hillside RI. T-24 and T-32 are active, permitted RCRA waste units. .
T-27	T-27 is immediately adjacent to T-21 and T-22; see T-21, T-22 comments.
T-29	Chromate contamination related to IHSS 137 (Cooling Tower Blowdown, Building 774), OU8 may affect soils on the northwest side of T-29.
T-40	IHSS 164.3 (Building 880 Storage Pad), OU14 targets TCL volatiles, TCL semivolatiles, and various radionuclides.

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TABLE 3-1  
SAMPLE, MEDIA, QUANTITY, AND ANALYTES  
OU9 ORIGINAL PROCESS WASTE LINES

TANK No.	DUPLICATE IHSS No.	TANK INSPECTION	HPGe/NaI SURVEY	RESIDUE OR WIPE (1)	VAULT WATER (2)	GROUND- WATER (2)	SURFACE SOIL	BOREHOLE/ SOIL SAMPLES	METALS	VOLs	SEMI-VOLs	RAD	WQ	PCBs	PEST.	HERB.
T-1	NA	NO	4/TBD	0	0	3	0	3/8	X	NA	NA	X	X	NA	NA	NA
T-2, T-3	IHSS 122	YES (T-3)	4/TBD	3 (T-2) 1 (T-3)	3 (T-2)	5	11	5/15	X	X	X	X	X	X	NA	NA
T-7	IHSS 159	NO	4/TBD	0	0	4	0	4/12	X	X	X	X	X	X	X	X
T-8	IHSS 126	YES	4/TBD	0	0	4	0	4/12	X	X	X	X	X	X	NA	NA
T-9, T-10	IHSS 132	YES	4/TBD	2	0	4	0	4/12	X	X	X	X	X	NA	NA	NA
T-11, T-30	NA	YES	5/TBD	3	0	4	0	4/12	X	X	X	X	X	NA	NA	NA
T-14, T-16	IHSS 124 and 125	YES	12/TBD	1 (T-14) 2 (T-16)	0	5	0	5/25	X	X	X	X	X	NA	NA	NA
T-15, T-17	IHSS 146	NO	see T-14, T-16	0	0	see T-14, T-16	0	0	X	X	X	X	X	NA	NA	NA
T-21, T-22	NA	YES	4/TBD	1 (T-21) 3 (T-22)	2	4	0	4/12	X	X	X	X	X	NA	NA	NA
T-27	NA	NO	see T-21, T-22	0	0	0	3	0	X	X	X	X	NA	NA	NA	NA
T-24, T-32	NA	YES	4/TBD	8	0	3	0	3/8	X	X	X	X	X	X	NA	NA
T-29	NA	YES	10/TBD	2	1	4	2	4/12	X	X	X	X	X	X	X	X
T-40	NA	YES	4/TBD	2	2	4	0	4/12	X	X	X	X	X	NA	NA	NA
Samples of Opportunity	NA	NA	NA	0	2	4	2	12	X	X	X	X	X	X	X	X
TOTAL				34	10	47	18	44/153								

Notes:  
(1) If no residue is present, a wipe sample will be collected. Wipe samples will be analyzed only for qualitative radiological analysis.  
(2) Sample collected only if water is encountered.

HPGe = High purity Germanium  
NaI = Sodium Iodide, conducted only if HPGe data indicate anomalies  
No = Number  
PCBs = Polychlorinated biphenyls  
Pest = Pesticides  
Rad = Qualitative radiological analysis  
RF = Rocky Flats Method  
TBD = to be determined in the field based on HPGe results  
Vol = Volatiles  
WQ = pH, specific conductivity, selected anions (nitrate, nitrite, sulfate, chloride, fluoride),  
total organic carbon (only for water samples)  
X = analyses to be tested

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### 3.2.4 Tank T-8

Tank T-8 is located in Building 728 (the Building 771 Process Waste Pit). This location is also designated as IHSS 126. Tank T-8 consists of two 25,000-gallon underground tanks. The tanks were taken out of service in May 1984, cleaned and painted, and converted to plenum deluge catch tanks for fire-water from Building 771. The original waste streams for the tanks were from Building 771, (the Plutonium and Uranium Recovery Building). Waste streams include radionuclides, acids, bases, solvents, metals (including chromium<sup>+6</sup> and tantalum), fuel oil, lubricating oils, PCBs, and photography laboratory waste. According to Building 771 personnel, the T-8 tanks periodically fill with groundwater and may have leaked when they were in use due to cracks in the concrete. Surface water also runs into Building 728 during periods of high runoff.

Stage 1 activities will include a visual inspection of Tank T-8. An HPGe radiological survey will be conducted around the tank. If the results of the HPGe survey detect anomalies, then an NaI radiological survey will be conducted on 4-foot grids.

One residue sample will be collected from each of the tanks that have not been cleaned and painted. If no residue is present, then one wipe sample will be taken from each tank for radiological analysis. (Reference Appendix D for access ports for residue sampling.)

A total of four soil boreholes will be drilled. One borehole at each accessible side of the concrete tank. Three soil samples from each borehole will be collected at the following locations: surface sample (0 to 6 inches), 1 foot below the base of the tank (estimated at 20 to 25 feet below ground surface), and directly above the base of the tank (estimated at 10 to 12 feet below ground surface). If groundwater is encountered in the boreholes, a HydroPunch® sampler or equivalent will be used to collect a groundwater sample. Sample locations are provided in Figure 3-3a.

Soil, groundwater, and residue samples will be analyzed for radiological analyses that include gross alpha, gross beta, uranium 233, 234, 235, and 238, americium 241, and plutonium 239 and 240. Groundwater samples will also be analyzed for tritium. Chemical analyses for all samples include TAL metals (including chromium<sup>+6</sup> and tantalum), TCL volatiles, TCL semi-volatiles, PCBs, and water quality parameters for groundwater samples including pH, specific conductivity, nitrate/nitrite, sulfate, chloride, fluoride, and TOC. Wipe samples will be analyzed for quantitative radionuclides. In the event that the water table yields insufficient quantities of groundwater, samples will be collected based on the following priority: TCL volatiles, radionuclides, water quality parameters, TCL semi-volatiles, PCBs, and metals.

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### 3.2.5 Tanks T-9 and T-10

Tanks T-9 and T-10 are located in Building 730 (the Building 771 Process Waste Pit). This location is also designated as IHSS 132. Tank T-9 consists of two 22,500-gallon underground concrete tanks with the dimensions of 25 feet by 15 feet by 10 feet. Tank T-9 is known as the Laundry Waste Holding Tanks. Waste streams for Tank T-9 were from Building 778 (Laundry). These tanks were taken out of service in October 1984, cleaned and painted, and converted to plenum deluge catch tanks. Tank T-10 consists of two 4,500-gallon, underground concrete tanks with the dimensions of 5 feet by 5 feet by 10 feet. These tanks are the Process Waste Holding Tanks and were abandoned in December 1982; however, they have not been cleaned or painted since being removed from service. Waste streams for Tank T-10 were from Building 776 (Production Support) and Building 778 (Laundry). Waste streams for Tanks T-9 and T-10 included radionuclides, solvents, metals (including chromium<sup>+6</sup>), and small amounts of machinery and lubricating oils. Releases from the tanks are considered likely due to the condition of the tanks.

Stage 1 activities will include a visual inspection of Tank T-9 and T-10. An HPGe radiological survey will be conducted around the tanks. If the results of the HPGe survey detect anomalies, then an NaI radiological survey will be conducted on 4-foot grids.

One residue sample will be collected from each of the tanks that have not been cleaned and painted. If no residue is present, then one wipe sample will be taken from each tank for radiological analysis. (Reference Appendix D for access ports for residue sampling.)

A total of four soil boreholes will be drilled: One borehole at each accessible side of the concrete tanks. The borehole proposed along the west side of the tank location will be offset slightly to the south to avoid interference with the location of a leaking underground storage tank containing solvent (IHSS 118.10) that is being investigated under OU8. Three soil samples from each borehole will be collected at the following locations: ground surface before drilling (0 to 6 inches), 1 foot below the base of the tank (estimated at 26 to 29 feet below ground surface), and directly above the water table (estimated at 11 to 15 feet below ground surface). If groundwater is encountered in the boreholes, a HydroPunch® sampler or equivalent will be used to collect a groundwater sample. Sample locations are provided in Figure 3-4.

Soil, groundwater, and residue samples will be analyzed for radiological analyses that include gross alpha; gross beta; uranium 233, 234, 235, and 238; americium 241; and plutonium 239 and 240. Groundwater samples will also be analyzed for tritium. Chemical analyses for all samples include TAL metals (including chromium<sup>+6</sup>), TCL volatiles, TCL semi-volatiles, and water quality parameters for groundwater samples including pH, specific conductivity, nitrate/nitrite, sulfate, chloride, fluoride, and TOC. Wipe samples will be analyzed for quantitative radionuclides. In the event that the water table yields insufficient quantities of groundwater, samples will be collected based on the following priority: TCL volatiles, radionuclides, water quality parameters, TCL semi-volatiles, and metals.

### 3.2.6 Tanks T-11 and T-30

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Tanks T-11 and T-30 are located in Building 731 (the Building 707 Process Waste Pit). Tank T-11 consists of two 2,000 gallon, concrete tanks that were situated inside the Building 731 structure. Tank T-30 is one 23,111 gallon underground concrete structure (Building 731) and a 100 gallon concrete sump. In 1975, the concrete tanks were partially removed. The concrete wall that separated the two tanks was removed along with part of the concrete tank surface. New concrete was poured into the old process waste tanks and the 100 gallon sump. Currently, the area of the old process waste tanks serves as a secondary containment for the Building 707 process waste and plenum deluge tanks. The process waste and plenum deluge tanks are currently 90 day storage. Waste streams for Tanks T-11 and T-30 are from Building 707. These wastes include solvents, radionuclides, metals and other wastes used at RFP.

According to Building 707 personnel, there is a 100 gallon steel tank filled with Raschig Rings located in Building 731. This tank was used to contain fire deluge from Building 707. If the tank did overflow, it overflowed into the concrete process waste tanks. The piping that connected to the 100 gallon steel tank was disconnected in 1975. This tank did not contain process waste.

Stage 1 activities will include an HPGe Radiological Survey. If the results of the HPGe Survey detect anomalies, then an NaI Radiological Survey will be conducted on 4-foot grids.

A total of four soil boreholes will be drilled. One borehole at each accessible side of the concrete vault (T-30), containing the T-11 tanks. Three soil samples from each borehole will be collected at the following locations: Surface sample (0 to 6 inches), 1 foot below the base of the tanks (estimated at 13 to 15 feet below ground surface), and directly above the water table (estimated at 10 to 12 feet below ground surface).

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Operable Unit 9  
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If groundwater is encountered in the boreholes, a HydroPunch® sampler or equivalent will be used to collect a groundwater sample. One residue sample will be collected from each tank. If no residue is present, then 1 wipe sample will be taken from the vault area for radiological analysis. Sample locations are provided in Figure 3-4a.

Soil, groundwater, and residue samples will be analyzed for radiological analyses that include gross alpha, gross beta, uranium 233, 234, 235, and 238, americium 241, and plutonium 239 and 240. Chemical analyses for all samples include TAL metals (including tantalum), TCL volatiles, TCL semi-volatiles, and water quality parameters for groundwater samples include pH, specific conductivity, nitrate/nitrite, sulfate, chloride, fluoride, and TOC. Wipe samples will be analyzed for quantitative radionuclides. In the event that the water table yields insufficient quantities of groundwater, samples will be collected based on the following priority: TCL volatiles, radionuclides, water quality parameters, TCL semi-volatiles, and metals.

### 3.2.7 Tanks T-14 and T-16

Tanks T-14 and T-16 are located on the east side of Building 774 in a chemical storage shed. This is the same location as IHSSs 124.1 through 124.3, and IHSS 125. Tank T-14 consists of one 30,000-gallon underground concrete tank. Tank T-16 consists of two 14,000-gallon underground concrete tanks. Tank T-14 and Tank T-16 are designated as RFP Tanks 68, 66, and 67, respectively. Previous data indicate the tanks were abandoned in November 1989. Other data (DOE 1992b) indicate the tanks were to be closed in compliance with RCRA closure requirements. However, these tanks were reportedly removed from the list of RCRA-permitted or RCRA interim-status tanks before closure was conducted and transferred to OU9.

Tanks T-14 and T-16 received waste streams from Building 774 (the Process Waste Treatment Facility). Waste streams included acids, bases, radionuclides, metals, and other wastes used at RFP. Both Tanks T-14 and T-16 have been identified as release locations where tank overflow was documented in 1980 and 1981. The HRR (DOE 1992b) indicates that radiation surveys were conducted from 1977 to 1984. These results will be evaluated for a future technical memorandum.

Stage 1 activities include an HPGe radiation survey to verify that no radiation contamination exists on or around the concrete pad. If anomalies are detected during the HPGe survey, an NaI survey will be conducted.

Three surface soil grab samples will be collected from around the concrete pad closest to the area of the former leaking valve. Soil samples will be analyzed radiological analyses that include gross alpha; gross beta; uranium 233, 234, 235, and 238; americium 241; plutonium 239 and 240; and cesium 137. Chemical analyses include TAL metals; TCL volatiles; and TCL semivolatiles. The HPGe survey area and the surface soil samples are presented in Figure 3-6.

### 3.2.11 Tanks T-24 and T-32

Tanks T-24 and T-32 are located in Building 887 (the Building 881 Process Waste Pit). Tank T-24 consists of seven 2,700-gallon, above-grade steel tanks. Tank T-32 is a 131,160-gallon concrete vault that contains Tank T-24. Both tanks T-24 and T-32 are active RCRA units. Waste stream for T-24 is from Building 881. The waste stream for T-32 is any overflow from tanks T-24. Waste streams for T-24 and T-32 include radionuclides, solvents, metals (including chromium<sup>+6</sup>), acids, bases, oils, and PCBs. There has been no reported releases from these tanks.

Stage 1 activities will focus on characterizing any past releases from the tanks. Stage 1 activities will include a visual inspection of Tanks T-24 and T-32. An HPGe radiological survey will be conducted around the tanks. If the results of the HPGe Survey detect anomalies, then an NaI radiological survey will be conducted on 4-foot grids.

One residue sample will be collected, if feasible, from each of the tanks that have been cleaned and painted. If no residue is present, then one wipe sample will be taken, if feasible, from each tank for radiological analysis.

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A total of three soil boreholes will be drilled down-gradient of the tank location. Due to an active process waste line located to the west of the tanks and the concrete vault to the north, a fourth borehole can not be drilled as these areas are not accessible. Three soil samples from each borehole will be collected at the following locations: ground surface before drilling (0 to 6 inches), 1 foot below the base of the tank (estimated at 18 to 21 feet below ground surface), and directly above the water table (estimated at 22 to 25 feet below ground surface). If groundwater is encountered in the boreholes, a HydroPunch® sampler or equivalent will be used to collect a groundwater sample. Sample locations are provided in Figure 3-6a.

Soil, groundwater, and residue samples will be analyzed for radiological analyses that include gross alpha, gross beta, uranium 233, 234, 235, and 238, americium 241, plutonium 239, and 240, and neptunium 237. Chemical analyses for all samples include TAL metals (including chromium<sup>+6</sup>), TCL volatiles, TCL semi-volatiles, PCBs, and water quality parameters for groundwater samples including pH, specific conductivity, nitrate/nitrite, sulfate, chloride, fluoride, and TOC. Wipe samples will be analyzed for quantitative radionuclides. In the event that the water table yields insufficient quantities of groundwater, samples will be collected based on the following priority: TCL volatiles, radionuclides, water quality parameters, TCL semi-volatiles, PCBs, and metals.

### 3.2.12 Tank T-29

Tank T-29 is a 200,000-gallon, on-grade steel tank located south of Building 774 (Process Waste Treatment). Tank T-29 was used to store untreated process waste from Building 774. Records indicate that it was abandoned in the mid-1980s (DOE 1992a). The waste stream from Building 774 included acids, bases, solvents, radionuclides, metals, chlorides, oils, and grease. There are no reported releases from this tank.

APPENDIX A  
INVESTIGATION REQUIREMENTS AND PROPOSED ACTIONS  
TANK T-8 (HHSs 126.1, 126.2)  
UNDERGROUND PROCESS WASTE TANK

INTER-AGENCY AGREEMENT REQUIRED ACTION	OU9 WORK PLAN REQUIRED ACTION	OU9 PROPOSED ACTION FOR STAGE I
<ol style="list-style-type: none"> <li>1. Determine and document the types of wastes stored in these tanks during use.</li> <li>2. Conduct a soil sampling survey of the areas affected by sites 126.1 and 126.2. One soil borehole will be placed downgradient of each tank associated with site 126 and will be drilled to a depth of 10 feet below the bottom of each tank. The soil samples will be composited to define each 2-foot interval and will be analyzed for HSL volatiles. In addition, the soils will be composited to represent 6-foot intervals and will be analyzed for nitrates, total americium, beryllium, total uranium, total plutonium, gross alpha, and gross beta. In addition to the soil boreholes, surface scrapes 2 inches deep will be taken at the same location as the soil borehole composites. The most downgradient borehole will be completed as a downgradient alluvial monitoring well. The location of this well will be proposed in the RFI/RI Workplan to be submitted in accordance with section I.B.9. of the Statement of Work. This well shall be sampled immediately upon completion and quarterly thereafter. Groundwater samples will be analyzed for total nitrate, HSL volatiles, gross alpha, gross beta, total plutonium, total uranium, tritium, and HSL metals. Initial results of groundwater sampling and analysis will be submitted with the PSC report for this group of sites.</li> </ol>	<ol style="list-style-type: none"> <li>1. Conduct a prework radiation survey of borehole locations according to OP FO.16, Field Radiological Measurements.</li> <li>2. Conduct residue sampling of each tank that has not been cleaned and painted since removal from process waste service, to help characterize OPWL wastes. One sample will be collected for each tank. In instances where no residue is present, one wipe sample will be taken from the interior surface of the tank. Wipe samples will be collected and tested according to OP FO.16, Field Radiological Measurements.</li> <li>3. Boreholes will be drilled and sampled according to OP GT.02, Drilling and Sampling Using Hollow-stem Auger Techniques, using the continuous core method. One borehole will be drilled on each accessible side of the tank. In all cases, boreholes will be drilled as close as possible to the tank structure. One discrete soil sample will be collected at each of the following locations: (a) ground surface (before drilling) collected according to OP GT.08, Surface Soil Sampling; (b) 1 to 3 feet below the base of below-grade tanks unless base of tank is in bedrock; c) directly above the water table or bedrock/alluvium contact, whichever is encountered first; and (d) in bedrock at the bedrock/alluvium contact if groundwater is not encountered above the contact (i.e., where the vadose zone extends to the bedrock/alluvium contact).</li> </ol>	<ol style="list-style-type: none"> <li>1. Conduct a visual tank inspection.</li> <li>2. Conduct an HPGe survey of the area to assess radioactive contamination. If radioactive anomalies are found, a NaI radiation survey will be conducted. The NaI survey will be conducted using 4-foot grids and will cover the entire area of T-8 to delineate source.</li> <li>3. Conduct a prework radiation survey of all sample locations to assess radioactive contamination. Survey will be conducted using the NaI instrument, and in accordance with OP FO.16, Field Radiological Measurements.</li> <li>4. One residue sample will be collected from each tank that has not been cleaned and painted since removal from process waste service, to help characterize OPWL wastes. In instances where no residue is present, one wipe sample will be collected from each tank. Wipe samples will be collected and tested according to OP FO.16, Field Radiological Measurements.</li> <li>5. Four boreholes will be drilled; one on each side of the tanks. The boreholes will be drilled and sampled according to OP GT.02, Drilling and Sampling Using Hollow-stem Auger Techniques, using the continuous core method. In all cases, boreholes will be drilled as close as possible to the tank structure. One discrete soil sample will be collected at each of the following locations: (a) ground surface (before drilling) collected according to OP GT.08, Surface Soil Sampling; (b) 1 to 3 feet below the base of below-grade tanks. If the base of the tank is in bedrock or if the</li> </ol>

APPENDIX A  
INVESTIGATION REQUIREMENTS AND PROPOSED ACTIONS  
TANK T-8 (IHSSs 126.1, 126.2)  
UNDERGROUND PROCESS WASTE TANK

INTER-AGENCY AGREEMENT REQUIRED ACTION	OU9 WORK PLAN REQUIRED ACTION	OU9 PROPOSED ACTION FOR STAGE I
		<p>water table is not encountered and the distance from the base of the tank to the alluvium/bedrock contact is less than 5 feet, this sample will be omitted; (c) directly above the water table or bedrock/alluvium contact, whichever is encountered first; and (d) 1 foot below the bedrock/alluvium contact or at refusal if bedrock is encountered before the water table.</p> <p>6. If groundwater is encountered during borehole drilling, a HydroPunch® will be used to collect groundwater samples according to OP GW.06, Groundwater Sampling.</p>
<p><u>Notes:</u></p> <p>HPGe = high purity germanium</p> <p>Nal = sodium iodide</p> <p>OP = EMD Operating Procedure</p> <p>OPWL = Original Process Waste Lines</p> <p>OU = Operable Unit</p> <p>RFP = Rocky Flats Plant</p>		

APPENDIX A  
INVESTIGATION REQUIREMENTS AND PROPOSED ACTIONS  
TANK T-9 and T-10 (IHSS 132)  
RADIOACTIVE SITE #4 - 700  
UNDERGROUND PROCESS WASTE TANKS

INTER-AGENCY AGREEMENT REQUIRED ACTION	OU9 WORK PLAN REQUIRED ACTION	OU9 PROPOSED ACTION FOR STAGE I
<p>1. Conduct a soil sampling survey of the areas affected by site 132. Soil boreholes will be placed around each tank associated with site 132 and will be drilled to a depth of 10 feet below the bottom of each tank or 3 feet into weathered bedrock, whichever is greater. The soil samples will be composited to define each 6-foot interval and will be analyzed for total americium, total beryllium, total uranium, total plutonium, total alpha, and total beta.</p>	<p>1. Conduct a prework radiation survey of borehole locations according to OP FO.16, Field Radiological Measurements.</p> <p>2. Conduct residue sampling of each tank that has not been cleaned and painted since removal from process waste service, to help characterize OPWL wastes. One sample will be collected from each tank. In instances where no residue is present, one wipe sample will be taken from the interior surface of the tank. Wipe samples will be collected and tested according to OP FO.16, Field Radiological Measurements.</p> <p>3. Boreholes will be drilled and sampled according to OP GT.02, Drilling and Sampling Using Hollow-stem Auger Techniques, using the continuous core method. One boreholes will be drilled on each accessible side of the tank vault. In all cases, boreholes will be drilled as close as possible to the tank vault structure. One discrete soil sample will be collected at each of the following locations: (a) ground surface (before drilling) collected according to OP GT.08, Surface Soil Sampling; (b) 1 to 3 feet below the base of below-grade tanks unless base of tank is in bedrock; (c) directly above the water table or bedrock/alluvium contact, whichever is encountered first; and (d) in bedrock at the bedrock/alluvium contact if groundwater is not encountered above the contact (i.e., where the vadose zone extends to the bedrock/alluvium contact).</p>	<p>1. Conduct a visual tank inspection.</p> <p>2. Conduct an HPGe survey of the area to assess radioactive contamination. If radioactive anomalies are found, a NaI survey will be conducted. The survey will be conducted using 4-foot grids and will cover the entire area of T-9 and T-10 to delineate source.</p> <p>3. Conduct a prework radiation survey of all sample locations to assess radioactive contamination. Survey will be conducted using the NaI instrument, and in accordance with OP FO.16, Field Radiological Measurements.</p> <p>4. One residue sample will be collected from each tank that has not been cleaned and painted since removal from process waste service, to help characterize OPWL wastes. In instances where no residue is present, one wipe sample will be collected from the interior surface of the tank. Wipe samples will be collected and tested according to OP FO.16, Field Radiological Measurements.</p> <p>5. Four boreholes will be drilled; one on each accessible side of the tank vault. The boreholes will be drilled and sampled according to OP GT.02, Drilling and Sampling Using Hollow-stem Auger Techniques, using the continuous core method. In all cases, boreholes will be drilled as close as possible to the tank vault structure. One discrete soil sample will be collected at each of the following locations: (a) ground surface (before drilling), collected according to OP GT.08, Surface Soil Sampling; (b) 1 to 3 feet below the base of below-grade tanks. If the base of the tank is in bedrock or if the water table is not encountered and the distance from the base of the tank to the alluvium/bedrock contact is less than 5 feet, this sample will be omitted;</p>

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APPENDIX A  
INVESTIGATION REQUIREMENTS AND PROPOSED ACTIONS  
TANK T-9 and T-10 (IHSS 132)  
RADIOACTIVE SITE #4 - 700  
UNDERGROUND PROCESS WASTE TANKS

INTER-AGENCY AGREEMENT REQUIRED ACTION	OU9 WORK PLAN REQUIRED ACTION	OU9 PROPOSED ACTION FOR STAGE I
		<p>(c) directly above the water table or bedrock/alluvium contact, whichever is encountered first; and (d) 1 foot below the bedrock/alluvium contact or at refusal if bedrock is encountered before the water table.</p> <p>6. If groundwater is encountered during borehole drilling, a HydroPunch® will be used to collect groundwater samples according to OP GW.06, Groundwater Sampling.</p>
<p><u>Notes:</u>            HPGc = high purity germanium            OP = EMD Operating Procedure            OPWL = Original Process Waste Lines            OU = Operable Unit</p>		

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APPENDIX A  
INVESTIGATION REQUIREMENTS AND PROPOSED ACTIONS  
TANKS T-11, T-30  
BUILDING 707 PROCESS WASTE PIT

INTER-AGENCY AGREEMENT REQUIRED ACTION	OU9 WORK PLAN REQUIRED ACTION	OU9 PROPOSED ACTION FOR STAGE 1
No Required Action	<ol style="list-style-type: none"> <li>1. Conduct a prework radiation survey of borehole locations according to OP FO.16, Field Radiological Measurements.</li> <li>2. Boreholes will be drilled and sampled according to OP GT.02, Drilling and Sampling Using Hollow-stem Auger Techniques, using the continuous core method. Investigation of removed tanks will consist of a single borehole drilled as closely as possible to the center of the original tank location. One discrete soil sample will be collected at each of the following locations: (a) ground surface (before drilling) collected according to OP GT.08, Surface Soil Sampling; (b) 1 to 3 feet below the base of the original tank; (c) directly above the water table or bedrock/alluvium contact, whichever is encountered first; and (d) in bedrock at the bedrock/alluvium contact if groundwater is not encountered above the contact (i.e., where the vadose zone extends to the bedrock/alluvium contact).</li> </ol>	<ol style="list-style-type: none"> <li>1. Conduct a visual tank inspection.</li> <li>2. Conduct an HPGe survey of the area to assess radioactive contamination. If radioactive anomalies are found, a NaI radiation survey will be conducted. The NaI survey will be conducted using 4-foot grids and will cover the entire area of T-11, T-30 to delineate source.</li> <li>3. Conduct a prework radiation survey of all sample locations to assess radioactive contamination. Survey will be conducted using the NaI instrument, and in accordance with OP FO.16, Field Radiological Measurements.</li> <li>4. One residue sample will be collected from each tank that has not been cleaned and painted since removal from process waste service, to help characterize OPWL wastes. In instances where no residue is present, one wipe sample will be collected from the vault area. Wipe samples will be collected and tested according to OP FO.16, Field Radiological Measurements.</li> <li>5. Four boreholes will be drilled; one on each side of the tanks. The boreholes will be drilled and sampled according to OP GT.02, Drilling and Sampling Using Hollow-stem Auger Techniques, using the continuous core method. In all cases, boreholes will be drilled as close as possible to the tank structure. One discrete soil sample will be collected at each of the following locations: (a) ground</li> </ol>

APPENDIX A  
INVESTIGATION REQUIREMENTS AND PROPOSED ACTIONS  
TANKS T-11, T-30  
BUILDING 707 PROCESS WASTE PIT

INTER-AGENCY AGREEMENT REQUIRED ACTION	OU9 WORK PLAN REQUIRED ACTION	OU9 PROPOSED ACTION FOR STAGE I
		<p>surface (before drilling) collected according to OP GT.08, Surface Soil Sampling; (b) 1 to 3 feet below the base of below-grade tanks. If the base of the tank is in bedrock or if the water table is not encountered and the distance from the base of the tank to the alluvium/bedrock contact is less than 5 feet, this sample will be omitted; (c) directly above the water table or bedrock/alluvium contact, whichever is encountered first; and (d) 1 foot below the bedrock/alluvium contact or at refusal if bedrock is encountered before the water table.</p> <p>6. If groundwater is encountered during borehole drilling, a HydroPunch® will be used to collect groundwater samples according to OP GW.06, Groundwater Sampling.</p>
<p><u>Notes:</u></p> <p>HPGe = high purity germanium</p> <p>NaI = sodium iodide</p> <p>OP = EMD Operating Procedure</p> <p>OPWL = Original Process Waste Lines</p> <p>OU = Operable Unit</p> <p>RFP = Rocky Flats Plant</p>		

APPENDIX A  
INVESTIGATION REQUIREMENTS AND PROPOSED ACTIONS  
TANK T-24 and T-32  
UNDERGROUND PROCESS WASTE TANKS

INTER-AGENCY AGREEMENT REQUIREMENT ACTION	OU9 WORK PLAN REQUIRED ACTION	OU9 PROPOSED ACTION FOR STAGE I
<p>1. No Required Action</p>	<p>1. Conduct a prework radiation survey of borehole locations according to OP FO.16, Field Radiological Measurements.</p> <p>2. Boreholes will be drilled and sampled according to Op GT.02, Drilling and Sampling Using Hollow-stem Auger Techniques, using the continuous core method. One borehole will be drilled on each accessible side of the tank vault. In all cases, boreholes will be drilled as close as possible to the tank vault structure. One discrete soil sample will be collected at each of the following locations: (a) ground surface (before drilling) collected according to OP GT.08, Surface Soil Sampling; (b) 1 to 3 feet below the base of below-grade tanks unless base of tank is in bedrock/alluvium contact, whichever is encountered first; and (d) in bedrock/alluvium contact if groundwater is not encountered above the contact (i.e., where the vadose zone extends to the bedrock/alluvium contact).</p>	<p>1. Conduct a visual tank inspection.</p> <p>2. Conduct an HPGe survey of the area to assess radioactive contamination. If radioactive anomalies are found, a NaI survey will be conducted. The survey will be conducted using 4-foot grids and will cover the entire area of T-24 and T-32 to delineate source.</p> <p>3. Conduct a prework radiation survey of all sample locations to assess radioactive contamination. Survey will be conducted using the NaI instrument, and in accordance with OP FO.16, Field Radiological Measurements.</p> <p>4. One residue sample will be collected from each tank that has not been cleaned and painted since removal from process waste service, to help characterize OPWL wastes. In instances where no residue is present, one wipe sample will be collected from the interior surface of the tank. Wipe samples will be collected and tested according to OP FO.16, Field Radiological Measurements.</p> <p>5. Three boreholes will be drilled, one on each accessible side of the tank vault. The boreholes will be drilled and sampled according to OP GT.02, Drilling and Sampling Using Hollow-stem Auger Techniques, using the continuous core method. In all cases, boreholes will be drilled as close as possible to the tank vault structure. One discrete soil sample will be collected at each of the following locations: (a) ground surface (before drilling), collected according to OP GT.08, Surface Soil Sampling; (b) 1 to 3 feet below the base of below-grade tanks. If the base of the tank is in bedrock or if the water table is not encountered and the distance from the base of the tank to the alluvium/bedrock contact is less than 5 feet, this sample will be omitted;</p>

**APPENDIX A**  
**INVESTIGATION REQUIREMENTS AND PROPOSED ACTIONS**  
**TANK T-24 and T-32**  
**UNDERGROUND PROCESS WASTE TANKS**

INTER-AGENCY AGREEMENT REQUIRED ACTION	OU9 WORK PLAN REQUIRED ACTION	OU9 PROPOSED ACTION FOR STAGE I
		<p>(c) directly above the water table or bedrock/alluvium contact, whichever is encountered first; and (d) 1 foot below the bedrock/alluvium contact or at refusal if bedrock is encountered before the water table.</p> <p>6. If groundwater is encountered during borehole drilling, a HydroPunch will be used to collect groundwater samples according to OP GW.06, Groundwater Sampling.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>HPOs - High purity germanium</li> <li>NaI - sodium iodide</li> <li>OP - EMD Operating Procedure</li> <li>OPWL - Original Process Waste Lines</li> <li>OU - Operable Unit</li> <li>RFP - Rocky Flats Plant</li> </ul>		

APPENDIX A  
INVESTIGATION REQUIREMENTS AND PROPOSED ACTIONS  
TANK T-40  
BUILDING 889 PROCESS WASTE PIT

INTER-AGENCY AGREEMENT REQUIRED ACTION	OU9 WORK PLAN REQUIRED ACTION	OU9 PROPOSED ACTION FOR STAGE I
No Required Action	Not previously identified.	<ol style="list-style-type: none"> <li>1. Conduct a visual tank inspection.</li> <li>2. Conduct an HPGe survey of the area to assess radioactive contamination. If radioactive anomalies are found, a NaI radiation survey will be conducted. The NaI survey will be conducted using 4-foot grids and will cover the entire area of T-40 to delineate source.</li> <li>3. Conduct a prework radiation survey of all sample locations to assess radioactive contamination. Survey will be conducted using the NaI instrument, and in accordance with OP FO.16, Field Radiological Measurements.</li> <li>4. One residue sample will be collected from each tank that has not been cleaned and painted since removal from process waste service, to help characterize OPWL wastes. In instances where no residue is present, one wipe sample will be collected from the interior surface of the tank. Wipe samples will be collected and tested according to OP FO.16, Field Radiological Measurements.</li> <li>5. One water sample will be collected from the concrete vault if water is present.</li> <li>6. Four boreholes will be drilled; one on each side of the tanks. The boreholes will be drilled and sampled according to OP GT.02, Drilling and Sampling Using Hollow-stem Auger Techniques, using the continuous core method. In all cases, boreholes will be drilled as close as possible to the tank structure. One discrete soil sample will be collected at each of the following locations: (a) ground</li> </ol>

APPENDIX A  
INVESTIGATION REQUIREMENTS AND PROPOSED ACTIONS  
TANK T-40  
BUILDING 889 PROCESS WASTE PIT

INTER-AGENCY AGREEMENT REQUIRED ACTION	OU9 WORK PLAN REQUIRED ACTION	OU9 PROPOSED ACTION FOR STAGE I
		<p>surface (before drilling) collected according to OP GT.08, Surface Soil Sampling; (b) 1 to 3 feet below the base of below-grade tanks. If the base of the tank is in bedrock or if the water table is not encountered and the distance from the base of the tank to the alluvium/bedrock contact is less than 5 feet, this sample will be omitted; (c) directly above the water table or bedrock/alluvium contact, whichever is encountered first; and (d) 1 foot below the bedrock/alluvium contact or at refusal if bedrock is encountered before the water table.</p> <p>6. If groundwater is encountered during borehole drilling, a HydroPunch® will be used to collect groundwater samples according to OP GW.06, Groundwater Sampling.</p>
<p><u>Notes:</u></p> <p>HPGe = high purity germanium</p> <p>NaI = sodium iodide</p> <p>OP = EMD Operating Procedure</p> <p>OPWL = Original Process Waste Lines</p> <p>OU = Operable Unit</p> <p>RFP = Rocky Flats Plant</p>		

TABLE 5-1  
ANALYTICAL PARAMETERS  
OU9 ORIGINAL PROCESS WASTE LINES

ANALYSIS	TANKS											
	T-1	T-2, T-3	T-7	T-8	T-9, T-10	T-11, T-30	T-14,T-15, T-16,T-17	T-21, T-22	T-24, T-32	T-27	T-29	T-40
CLP TAL for Metals	X	X	X	X	X	X	X	X	X	X	X	X
Chromium <sup>+6</sup>	-	-	X	X	X	-	X	-	X	-	X	-
Tantalum	-	-	-	X	-	X	X	-	-	-	X	-
TCL Vol	-	X	X	X	X	X	X	X	X	X	X	X
TCL Semi Vol	-	X	X	X	X	X	X	X	X	X	X	X
Polychlorinated biphenyls	-	X	X	X	-	-	-	-	X	-	X	-
Pesticides	-	-	X	-	-	-	-	-	-	-	X	-
Herbicides	-	-	X	-	-	-	-	-	-	-	X	-
WQPL	X	X	X	X	X	X	X	X	X	-	X	X
Total Organic Carbon	X	X	X	X	X	X	X	X	X	X	X	X
Uranium 233,234	X	X	X	X	X	X	X	X	X	X	X	X
Uranium 235	X	X	X	X	X	X	X	X	X	X	X	X
Uranium 238	X	X	X	X	X	X	X	X	X	X	X	X
Americium 241	X	X	X	X	X	X	X	-	X	-	X	-
Plutonium 239, 240	X	X	X	X	X	X	X	X	X	X	X	-
Tritium	-	-	-	X	X	-	-	-	-	-	X	-
Np-237	-	-	-	-	-	-	-	-	X	-	X	-

Notes:

SVOL = Semivolatiles

TAL = Target Analyte List

TCL = Target Compound List

VOL = Volatiles

WQPL = Water Quality Parameter List (Nitrate/Nitrite, Sulfate, Chloride, pH, Specific Conductance)

NA = Not applicable

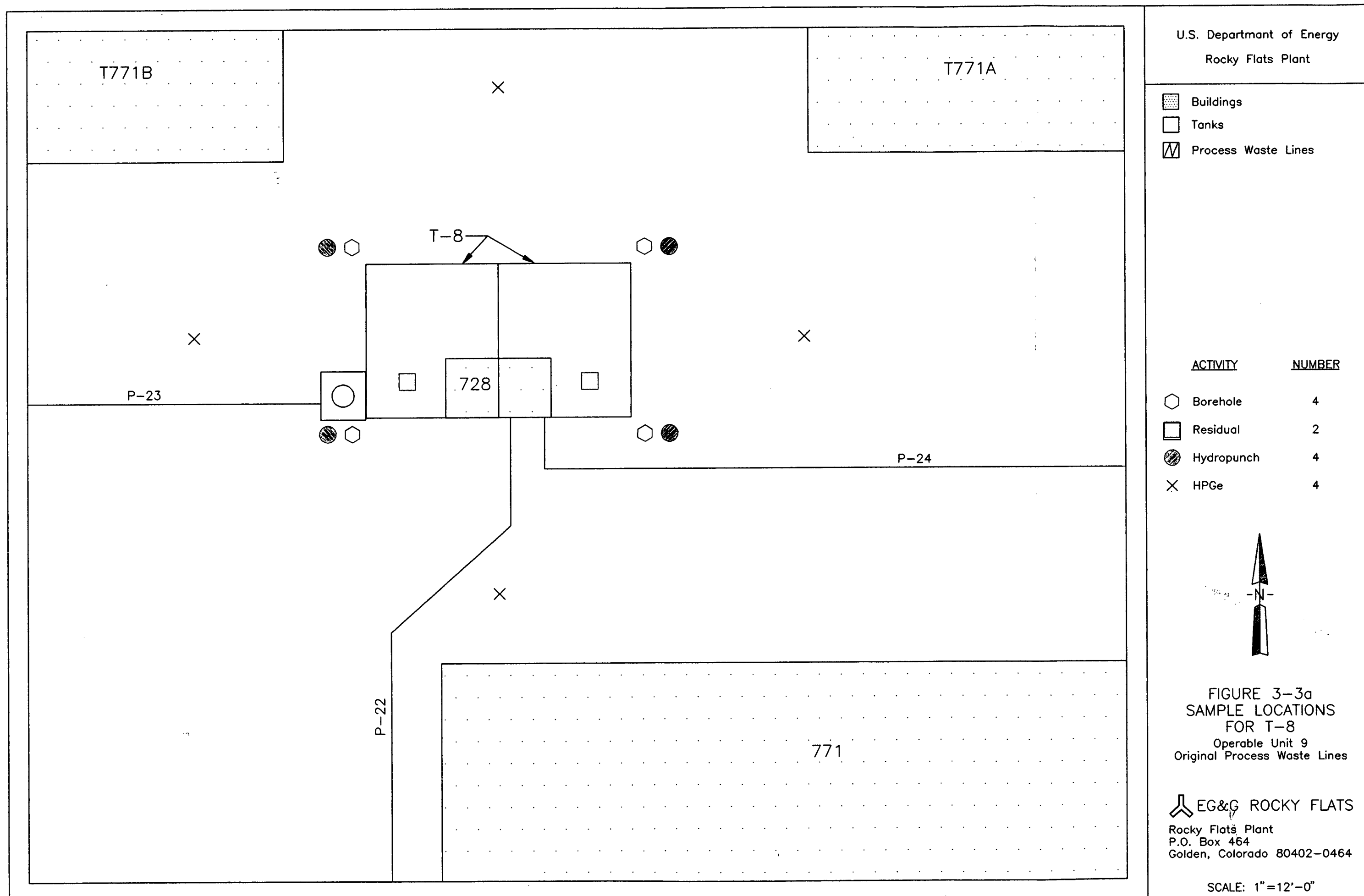
X = Analyte to be tested

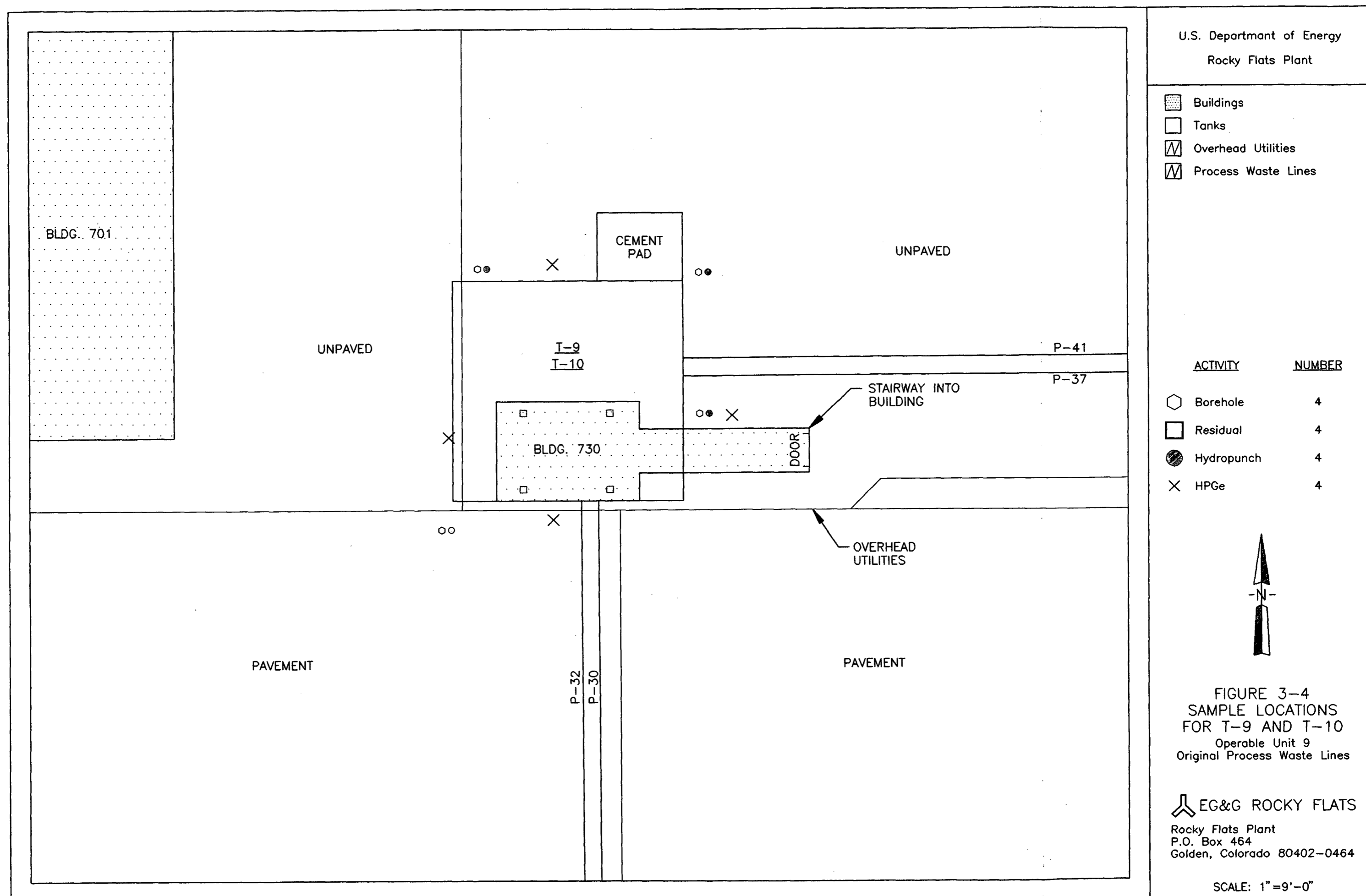
- = Analyte will not be tested

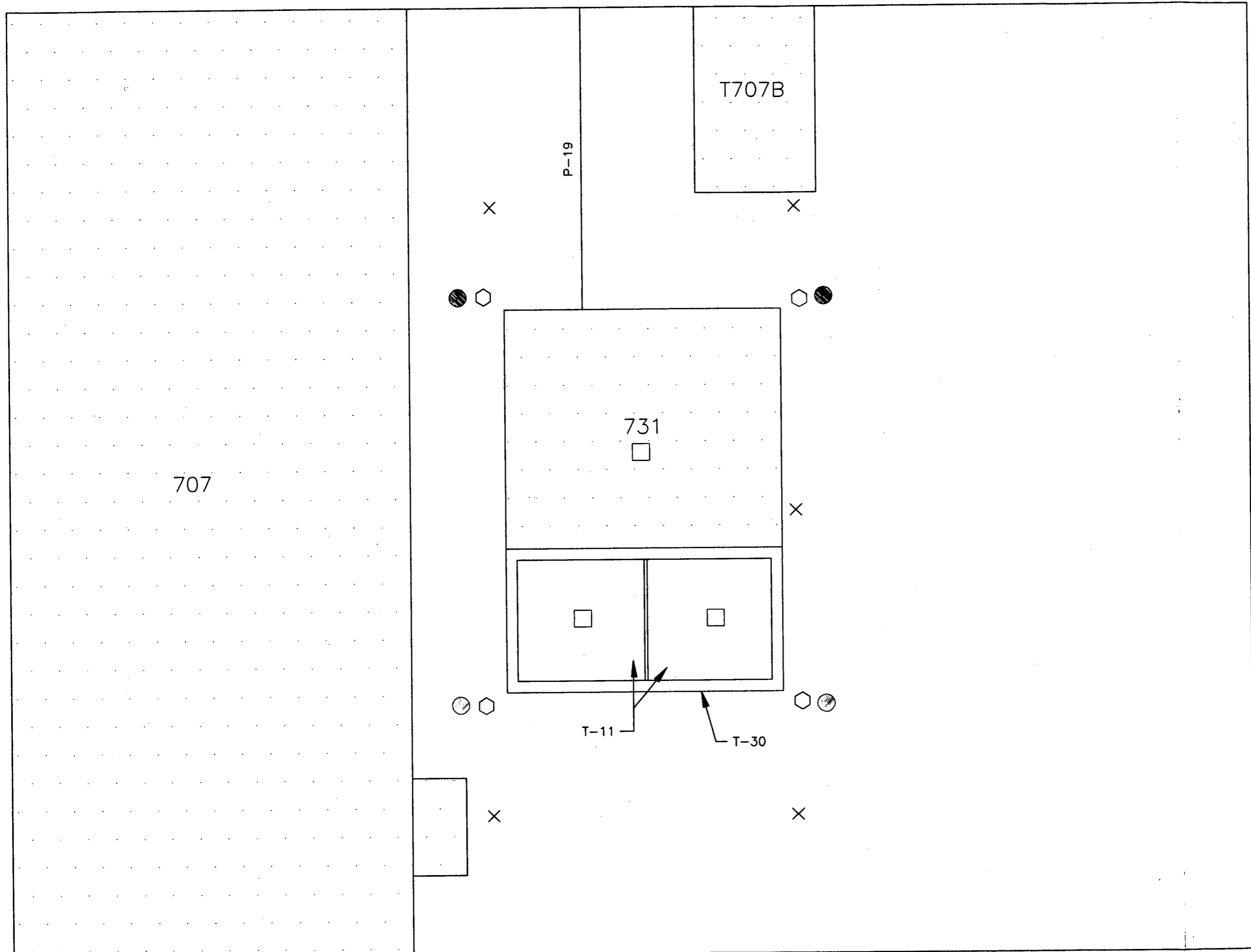
All radionuclide analyses include gross alpha and gross beta.

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U.S. Department of Energy  
Rocky Flats Plant

- Buildings
- Tanks
- Process Waste Lines

ACTIVITY	NUMBER
Borehole	4
Residual	3
Hydropunch	4
HPGe	5

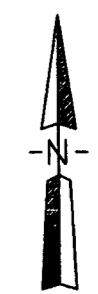
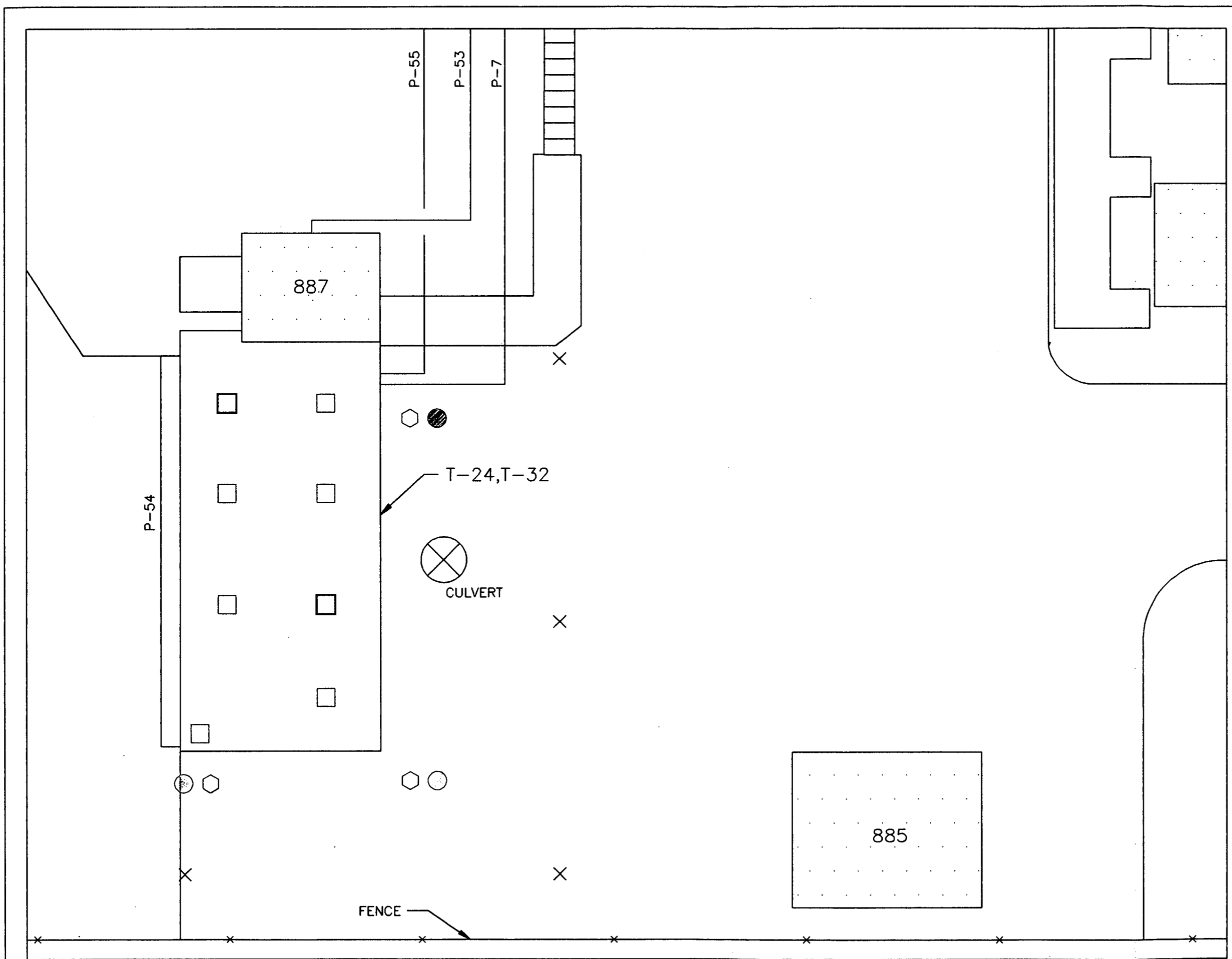


FIGURE 3-4a  
SAMPLE LOCATIONS  
FOR T-11 AND T-30  
Operable Unit 9  
Original Process Waste Lines

EG&G ROCKY FLATS  
Rocky Flats Plant  
P.O. Box 464  
Golden, Colorado 80402-0464

SCALE: 1" = 7'-6"



U.S. Department of Energy  
Rocky Flats Plant

- Buildings
- Tanks
- Process Waste Lines

ACTIVITY	NUMBER
Borehole	3
Residual	8
Hydropunch	3
HPGe	4



FIGURE 3-6a  
SAMPLE LOCATIONS  
FOR T-24 and T-32  
Operable Unit 9  
Original Process Waste Lines

EG&G ROCKY FLATS  
Rocky Flats Plant  
P.O. Box 464  
Golden, Colorado 80402-0464

SCALE: 1"=12'-0"